

ABSTRACT OF THE DISCLOSURE

A patch antenna apparatus includes an antenna element and a metal frame, which are disposed on a ground plane.

5 The antenna element has a dielectric substrate, which has a patch electrode on the top surface and has a ground electrode on the bottom surface. The patch electrode is connected to current-feed pins. The metal frame is positioned so as to surround the peripheral surface of the
10 dielectric substrate. The height dimension of the metal frame is set to be slightly larger than the thickness dimension of the dielectric substrate. Electromagnetic radiation radiated from the antenna element is reflected upon reaching the metal frame. Thus, the metal frame causes
15 interference with the electromagnetic radiation such that the traveling direction of the electromagnetic radiation is redirected closer to the lateral direction.